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ABSTRACT

This report results from a meeting between five teachers who wanted to (a) dicuss performance and behavioral objectives, (b) work together outside their teaching fields, (c) edit objectives written by one another, and (d) develop materials that could be used in writing them. Five sample objectives are given, each dealing with a different occupational area, as follows: (a) telling time (special education); (b) flowchart (data processing); (c) engine tune-up, troubleshooting, agricultural and diesel mechanics; (d) classification of common fractures; and (e) auto body painting. General objectives for the reader are presented, followed by the teacher-generated objective, nonexpert reactions, and alternative revisions. The last sample also includes a self-evaluation answer key and the following alternative teaching strategies: (a) on-the-job sequencing, (b) different domains, and (c) a learning sequence on level of difficulty. Conclusions and a critical evaluation form for the manuscript are included. (PB)

TITLE:

IMPROVING TEACHER GENERATED OBJECTIVES IN ORDER
THAT LEARNERS MAY SELF-EVALUATE BETTER

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May 19, 1975

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INTRODUCTION

There are many teachers who state their requests bluntly, "I don't want any monkey business. Tell me exactly what to do to make my objectives and teaching material better, and I'll do it!"

There are other teachers who don't want to be told what to do. They put their case just as forcefully, "Don't tell me what to do! If it has been done, show me the product before the treatment and the product afterwards. I will make up my own mind. After all, you should be able to put it into print so that I can read it and apply it."

It is quite a shock for a group lecturer to be presented with these two requests. After all, the lecturer is used to telling people what to do, showing people how to do it, and then discussing it.

It is a new experience for a group lecturer to place his talk on paper.

Perhaps, a chance to look at it will provide a new perspective.

The following pages are recommended for any teacher who has developed objectives and learning materials.

The following pages show examples of BEFORE and AFTER products of teachers like the two making the above requests. Each of the before products does have a certain creativity and originality about it.

The after product has lost none of its creativity and originality. The after product has added the element of systematic development.

This document is designed for educators who are eager to improve their teaching potential. This document is designed for classroom educators who want to set up learning modules.

This document is for educators who want to come up with better objectives and better modules without having to put in long hours of writing, rewriting, editing, reediting, and publication.

This material is for the teacher who wants to do a good job WITHOUT WASTING TIME.

THE ORIGIN
OF THIS MATERIAL

In the summer of 1973, five teachers were asked to get together for the following purposes :

a. discuss their opinions about the current topic of performance and behavioral objectives,

b. work together outside their teaching fields,

c. edit objectives written by one another,

d. develop materials that could be used by others who are more interested in teaching with operational objectives than in writing them.

Five samples of their meeting are given. These samples are intended to

FAMILIARIZE you with a range of performance objectives, going from elementary to advanced systems

INSPIRE you with confidence to do it yourself

SHOW YOU HOW to do it.

Translating this into objectives that center around you the reader, this means that after reading and discussing this material you will

APPLY examples of how to put performance objectives together into mastery level achievements,

CONSTRUCT operational objectives, correlated learning resources, and criterion-referenced evaluation items

FEEL CONFIDENT ENOUGH to begin right now even though your initial efforts are not immediately perfect.

IMPROVING TEACHER GENERATED OBJECTIVES

IN ORDER THAT LEARNERS MAY SELF-EVALUATE BETTER

The following example is from the occupational area of TIME TELLING (SPECIAL ED.).

As a result of going through this example, no matter what occupational area you teach, you should be able to:

KO: Pinpoint appropriate knowledge objectives (KO), performance objectives (PO), and attitude objectives (AO).

PO: Use performance/behavioral objectives in such a way that your students will catch on more quickly as to exactly what you expect of them.

AO: Appreciate the obvious fact that teaching with performance/behavioral is more important than merely writing them.

To this end, the following three sections are dedicated.

SECTION 1: THE TEACHER GENERATED OBJECTIVE

One teacher generated instructional objectives for students and a teacher developed test items that might be used to determine if this objective has been reached.

SECTION 2: A FEW NON-EXPERT REACTIONS

An overall analysis of the material in section 1 in order to stress (a) the use and abuses of performance/behavioral objectives and (b) the strength and needed improvements of the objectives and test items in section 1

SECTION 3: A FEW ALTERNATIVE REVISIONS

A few glimpses at the way the finished product of this developmental project might look.

SECTION 1

THE TEACHER GENERATED OBJECTIVE AS IT CAME FROM THE TEACHER

BEHAVIORAL OBJECTIVE (for EMR'S and for TMR's)

The student will be able to adjust the hands of a Play Skool Gear Clock and indicate the exact time (hour and minutes) within a 10 second interval after being questioned.

TEST ITEM

Given a Play Skool Gear Clock, the student will be able to adjust the hands and indicate the exact time (hour and minutes) within a 10 second interval after being questioned, for each of the following times:

1 - 12:00 noon

2 - 4:13 p.m.

3 - 8:45 a.m.

4 - 10:55 a.m.

5 - 2:20 p.m.

6 - 7:43 p.m.

SECTION 2

SOME TYPICAL NON-EXPERT REACTIONS

1. What is the meaning of EMR and TMR?

2. Should the child INDICATE THE EXACT TIME before or after he is able to ADJUST THE HANDS OF THE CLOCK?

3. Can this objective which seems simple enough place in an easier to understand format?

4. Should there be a separate test item for INDICATING THE EXACT TIME (HOUR AND MINUTES) and a separate test item for ADJUSTING THE HANDS?

5. Should there be levels of difficulty for indicating the exact time and adjusting the hands of the clock?

6. Should the HOUR HAND or the MINUTE HAND be studied first?

7. Is the criteria of WITHIN A 10 SECOND INTERVAL superfluous?

SECTION 3

SAMPLE REWRITING OF THIS OBJECTIVE

GIVEN:

1. A Play Skool Gear Clock
2. Directions from the teacher

PERFORMANCE: The student will

1. <u>Indicate</u> the exact time
2. <u>Adjust</u> the hands of the clock

CRITERIA:

LEVEL 1. The exact hour

LEVEL 2. The exact minute

TEST ITEMS:

Adjust the clock for:

LEVEL 1. 8:00 a.m.

9:00 p.m.

11:00 a.m.

LEVEL 2. 7:15 a.m.

9:40 p.m.

IMPROVING TEACHER GENERATED OBJECTIVES

IN ORDER THAT LEARNERS MAY SELF-EVALUATE BETTER

The following example is from the occupational area of FLOWCHART (DATA PROCESSING).

As a result of going through this example, no matter what occupational area you teach, you should be able to:

KO: Pinpoint appropriate knowledge objectives (KO), performance objectives (PO), and attitude objectives (AO).

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SECTION 1

THE TEACHER GENERATED OBJECTIVES

DATA PROCESSING

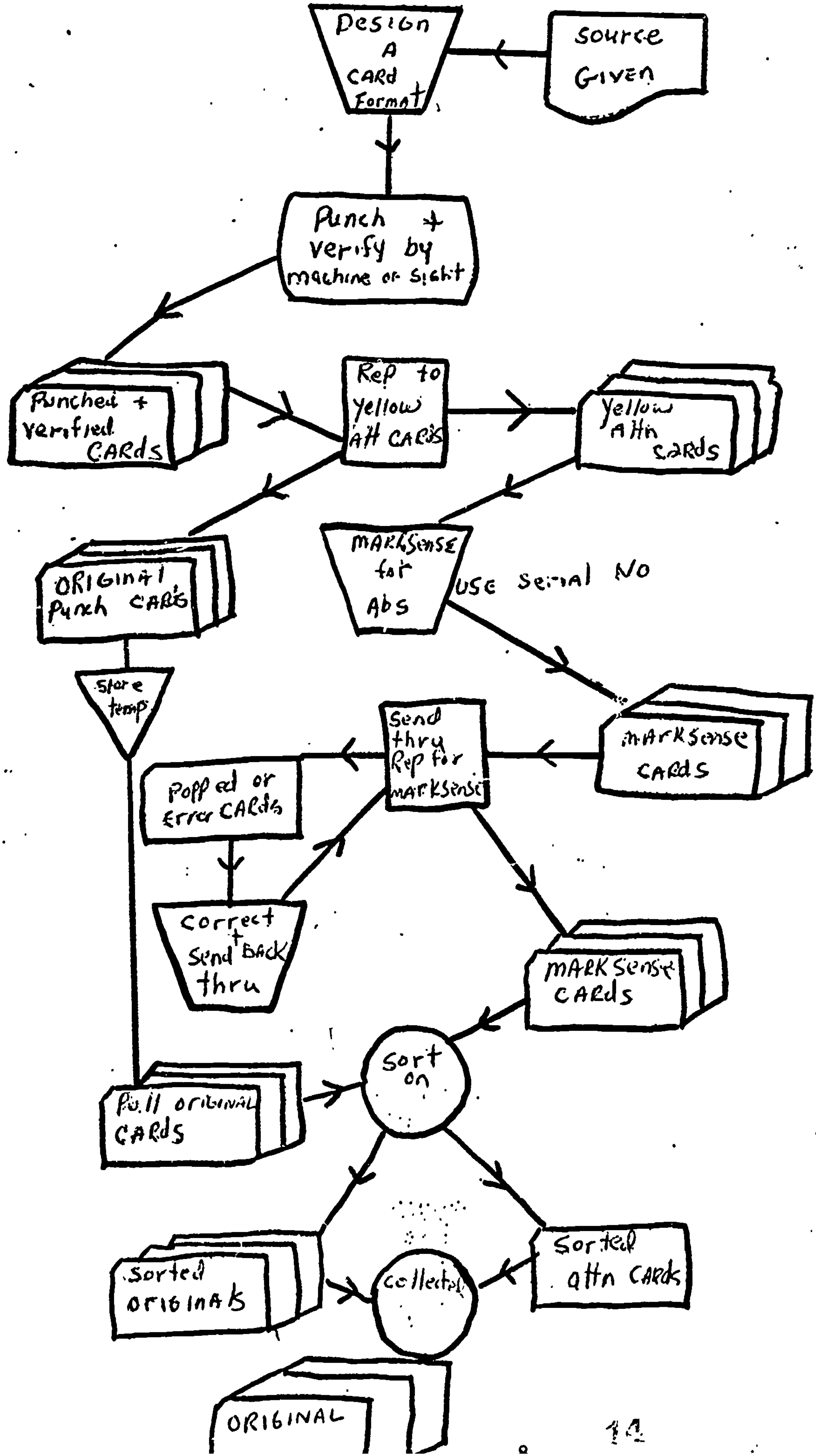
OBJECTIVES:

1. To enable students to detect errors as they occur in their machine operations and take proper steps to correct them and to be responsible for them.
2. To enable the students to understand and properly carry out steps displayed in flowcharts involving the use of machines.
3. To enable the students to plan and wire the control panels for various jobs.
4. To develop an understanding of card design, forms design, and flowcharting.

TESTS:

The test is in the form of a systems flowchart that the student must follow and perform on the various machines involved.

To be evaluated during and upon completion by the instructor.


Design A Card Format
Source Given
Punch + verify by machine or sight
Punched + verified CARds
Rep to yellow Att CARds
Yellow Attn cards
ORIGINAL Punch CARds
MARKSense for Abs
USE Serial NO
Store temp
Send thru Rep for marksense
MARKSense CARdS
Popped or Error CARds
Correct + Send back thru
MARKSense CARds
Sort on
Pull original CARds
Sorted originals
Sorted attn CARds
collected
ORIGINAL

SECTION 2

A FEW NON-EXPERT REACTIONS

1. Is DETECT ERRORS a knowledge objective or a performance objective?
2. Is TAKE PROPER STEPS TO CORRECT THEM a necessary law for the obvious performance objective of CORRECT ERRORS?
3. Should objective 2 be broken down into the two objectives of UNDERSTAND and PROPERLY CARRY OUT?
4. Similarily, shouldn't PLAN and WIRE be considered a specific performance objective?
5. Is it possible that the flowchart given to the students is just as complicated and unreadable as the one reproduced here?

A FEW ALTERNATIVE REVISIONS

THE TRAINING MATRIX

	KNOWLEDGE (Information)	PERFORMANCE (Training)	ATTITUDE (Motivation)
OBJECTIVE (TARGETS)	KO 1. Detect errors 2. Comprehend the path through the flowchart 3. Plan out a wiring diagram 4. Gather basic info.	PO 1. Correct errors 2. Execute the steps displayed in flow-chart be properly using machines 3. Wire the control panels for specific jobs	AO 1. Assume the responsibility of self-correction 2. Follow procedures 3. Figure things out on one's own
EVALUATION (TESTS)	KE KO-?	PE PO-?	AE
RESOURCES (TECHNOLOGY)	KR KR-4 - Card design, form design, flowcharts	PR	AR
	(Principles)	(Techniques)	(Human Relations)

The incomplete nature of this training matrix makes it obvious that the data processing teacher must provide more specific KE and more specific PE. Similarily, this teacher must provide AE, KR, PR, and AR.

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IMPROVING TEACHER GENERATED OBJECTIVES

IN ORDER THAT LEARNERS MAY SELF-EVALUATE BETTER

The following example is from the occupational area of Engine Tune-Up, Troubleshooting, Agricultural and Diesel Mechanics.

As a result of going through this example, no matter what occupational area you teach, you should be able to:

KO: Pinpoint appropriate knowledge objectives (KO), performance objectives (PO), and attitude objectives (AO).

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SECTION 1

THE TEACHER GENERATED OBJECTIVE

Below is a reproduction of Unipac number 01.0301-06-01. This Unipac is reproduced exactly as it came from the hands of a teacher.

Name ____________________ Title: Engine Tune-up, Troubleshooting, Ag. and Diesel Mech.

Date ____________ Started

____________ Finished

Prerequisites: Module 01.0301-05

Rationale and Concepts:

Owners and operators of farm and industrial equipment are in need of people who can perform an accurate diagnosis of needed repairs. This is frequently performed at dealerships which sell and service equipment as well as on-the-job where the equipment if being used.

Many maintenance procedures are performed only after a breakdown has occurred. It is assumed by many, that it is much better if possible malfunctions are located before major repairs are necessary. This unipac is designed to help you be a better "investigator" of possible malfunctions that may lead to major repairs if they go unnoticed.

Objectives:

Visually inspect a tractor and make decisions as to the extent of repair or tune-up which is needed. The determination of malfunctions may include questioning of the equipment operators.

Number answers right ________

Number answers wrong ________

Pretest:

1. List the five engine systems which should be visually inspected.

   1. 3.

   2. 4.

   5.

2. For each of the systems named in question 1, list the parts which you would inspect.

   System ________________________________

   Parts:

   System ________________________________

   Parts:

   System ________________________________

   Parts:

   System ________________________________

   Parts:

   System ________________________________

   Parts:

3. See your instructor to determine an engine which is to be visually inspected. Use either an inspection checklist to record your findings or a cassette recorder and polaroid camera to record your findings. You should accurately locate and describe 90% of the actual malfunctions.

   The checklist is the next page. Read it over to see if you can use it.

   Then see the instructor to determine the engine to be used and how you wish to record your answer. (Bring your ideas.)

Pretest - Answer Key

1. 1. electrical (including ignition)
   2. cooling
   3. air intake
   4. fuel
   5. lubrication

2. electrical - wiring, spark plugs, distributor, ignition coil, battery and cables, gauges

   cooling - engine oil ban, engine block and head including head gasket, water pump, fan and fan belt, radiator, hoses

   air intake - hoses and connections, manifold(s), air filter and housing

   fuel - lines, filter housings, pumps, and connections, linkage, tank

   lubrication - oil pan and rocker arm cover sealing surfaces, oil pan contents

3. discussion of the results will be adequate

Learning Activities:

Write on the line to the left of each learning activity the date on which you did the learning activity. There are extra spaces provided for you to write in more learning activities which you use.

_____1. Read pages 11-1 to 11-4 in the John Deere FOS Manual on Engines.

_____2. See the instructor for the instructions on engines to be visually inspected for problems. Develop a checklist to guide you as you make the inspection of the engine and questions of the operator. There is a blank sheet included (the next page) for you to make your checklist on. Use the information in the FOS Engine manual to help you get the information for the checklist.

_____3. Other activities - (Write them in.)

Results: ____Pass ____Fail

Posttest:

1. Perform a visual inspection of an engine in a tractor or power unit locating and properly identifying 90% of the total number of malfunctions.

Proof of having done this inspection can be provided at least three ways:

1. have the instructor or other qualified person observe you while you make the inspection, or

2. take polaroid pictures of the engine and record on cassette the description of the malfunctions identified, or

3. use portable video tape unit to record your findings, or

4. (?)

Quest:

Any other unipac in Module 01.0301-06

SECTION 2

A FEW NON-EXPERT REACTIONS

It is obvious that the writer of this unipac has put a lot of time and thought into his work. It is not the intention of the following paragraphs to criticize or belittle this effort.

It is the intention of the following paragraphs to show that there are many different ways to organize unipacs or modules.

Rather than settle for a long list of objectives, followed by a long list of test items, which in turn is followed by a long list of learning resources, a different order is suggested.

This new format is very simple:

FORMAT STEP ONE

Isolate each objective or component thereof.

FORMAT STEP TWO

Directly under this objective, list those test items that are directly correlated with the achievement of this objective.

FORMAT STEP THREE

After this listing of objectives and alternative test items, list a number of resources that are obviously correlated to the attainment of the objective under consideration.

When you do this to the following unipac, you will realize that this particular unipac is well thought out and yet there are some missing links.

A WORD OF CAUTION: The preceding paragraphs should not be misinterpreted as a plea for doing more writing. The writer of the preceding unipac has done enough writing. It's now time to start organizing with a minimum of writing and rewriting.

In order to operationalize the alternative to writing and rewriting, please consider the following three strategies:

A. SEQUENTIAL SEARCH

B. CUT AND PASTE

C. FILL IN THE BLANKS

SEQUENTIAL SEARCH

The basis of sequential search is quite simple. All you have to do is to identify a specific objective. Give this objective an identification number or code. Then, go through the material in front of you and put this number everywhere the objective appears either in objective form, test item form, or in resource form.

Once this is done for one objective, you go through the material in the same way. Occasionally, you will find out that the same test item or resource can be attached to two or three different objectives. This should cause you no difficulty.

After this has been done, you will find that you have test items or resources that cannot be directly linked to existing objectives. All you have to do here, is to add the appropriate number and write in the proper objective.

At other times, you will find objectives that lack either test items or resources or both. What you must do here, is to fill in the blanks.

LET'S TAKE AN EXAMPLE: Let's suppose that the objective you identify is MAKE DECISIONS AS TO THE EXTENT OF REPAIR OR TUNE-UP WHICH IS NEEDED. You number this number 1. As you look at the pretest, you put a 1 in front of question number 1 because this is directly connected to that same objective. You put a number 1 in front of pretest question number 2 for the same reason.

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You do not mark pretest question number 3 because that is most likely related to objective 2, VISUALLY INSPECT A TRACTOR.

For the learning activities, you put a 1 in front of learning activity number 1.

For the pretest you place a 1 in front of properly identify 90% of the total number of malfunctions.

Then, go back and do this for objective number 2.

You will begin to notice that there is still much material that is not properly identified with a 1 or a 2. This material obviously belongs to objective 3, LOCATE POSSIBLE MALFUNCTIONS BEFORE MAJOR REPAIRS ARE NECESSARY.

This example is not meant to be exhaustive. It gives you an idea of what to do.

SECTION 3

A FEW ALTERNATIVE REVISIONS

Here is a possible rearrangement of this unipac using KO for knowledge objective, PO for performance objective, and AO for attitude objective.

KO: Make decisions as to the extent of repair or tune-up which is needed.

PO: Visually inspect a tractor.

AO: Value the benefits that derive from locating possible malfunctions before major repairs are necessary.

With this coding system in mind, you might start thinking of KE (knowledge evaluation), PE (performance evaluation), and AE (attitude evaluation). Thus, for example, KE-1 could become the question that requires a student to list the five engine systems which should visually inspected. KE-2 could become the test item which requires a learner to list the parts in each of the systems he would inspect.

Similarily, PE-1 will be the part of the pre-test which requires the learner to develop an inspection checklist. PE-2 could refer to the use of a cassette recorder inaccurately transcribing the questions and answers of equipment operators. PE-3 could be the use of a polariod camera to record visual findings.

In the same way, AE could be seen as the willingness of the student to notice not only seriously maladjusted parts, but also those systems and parts which are beginning to show signs of wear or a slight maladjustment.

Now that you have been introduced to KO, PO, and AO. As well as KE, PE, and AE, you are ready to begin understanding KR (knowledge resource), PR (performance resource), and AR (attitude resource). A typical KR could be the pages referred to in the engine manual. A typical PR could be the demonstration given by an instructor as he actually shows you what to do. A typical AR could be the motivation given by your instructor as he stresses the need to make minor repairs before major repairs are required.

It must be stressed that this sequential search is nothing new. There is very little being added to the module. It is forcing the teacher to look over his organizations to make sure there are no missing links.

CUT AND PASTE: Once the teacher has made the suggested improvements above, he is not obliged to rewrite. If he feels he wants to come up with a rewritten format, he is better by taking a pair of sissors and a jar of paste and putting this material in a new format with a minimum of rewriting. Where ever he feels there is a hole missing he should supply the missing elements.

FILL IN THE BLANKS: It is not necessary for the teacher to write anything merely to fill the hole. He should make sure that he does have an effective piece of material. Thus, if you cannot come up with effective AR material, you should try to find out what your colleagues are doing elsewhere. There are many feedback systems available to let you know what your colleagues are doing when faced with the same problem as yourself.

IMPROVING TEACHER GENERATED OBJECTIVES

IN ORDER THAT LEARNERS MAY SELF-EVALUATE BETTER

The following example is from the occupational area of

CLASSIFICATION OF COMMON FRACTURES.

As a result of going through this example, no matter what occupational area you teach, you should be able to:

KO: Pinpoint appropriate knowledge objectives (KO), performance objectives (PO), and attitude objectives (AO).

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A few glimpses at the way the finished product of this developmental project might look.

SECTION 1

THE TEACHER GENERATED OBJECTIVE

AS RECEIVED FROM PARTICIPATING TEACHER

TITLE: Classification of Common Fractures

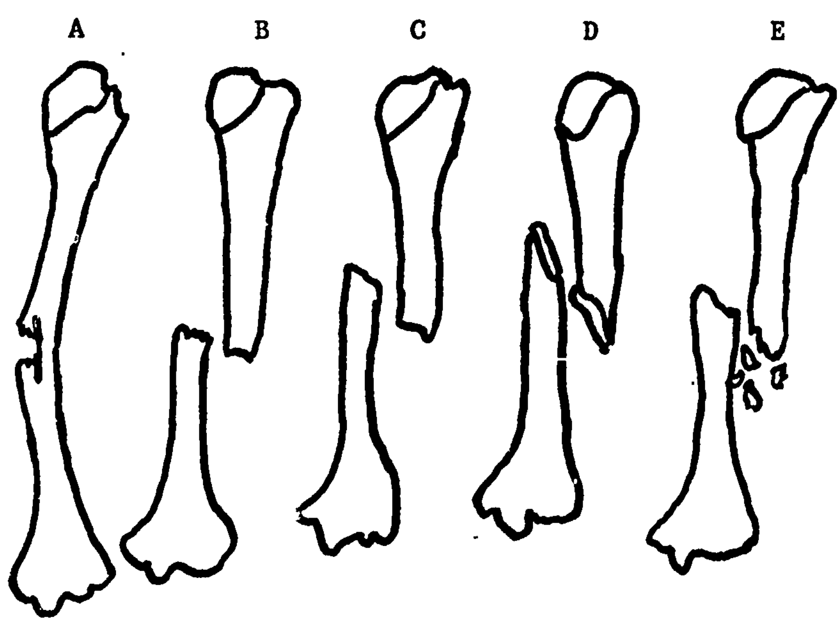
OBJECTIVE: Student will be able to identify from charts the common types of fractures at the end of this lesson.

TEST ITEM: Match the fractures with their proper name. Place the correct letter in the blank spaces.

_____ 1. Comminuted

_____ 2. Greenstick

_____ 3. Spiral



SECTION 2

TYPICAL NON-EXPERT INQUIRY

1. Are the words or the charts of this objective the better part?
2. Does the teacher really want the students to identify the common types of fractures FROM THE CHARTS or FROM OTHER SITUATIONS?
3. Are the words AT THE END OF THIS LESSON confusing? Unnecessary? Misleading?
4. Should the learner react differently to patients that possess different types of fractures?

SECTION 3

A FEW ALTERNATIVE REVISIONS

CONDITIONS:

1. Diagrams of common fracturers

2. The names for several common fracturers

PERFORMANCE:

1. The student will identify the common types of fracturers

CRITERIA:

1. Recognition ability

2. Correct chart matched with correct name

SECTION 4

ANOTHER ALTERNATIVE REVISION

KNOWLEDGE OBJECTIVE:

The student will identify the common types of fracturers with their proper name.

PERFORMANCE OBJECTIVE:

The student will apply the appropriate treatment to each of the different common types of fracturers.

ATTITUDE OBJECTIVE:

The student will appreciate the fact that a major fracture in either arm or leg can cause a large amount of emotional and physical suffering in the patient.

IMPROVING TEACHER GENERATED OBJECTIVES

IN ORDER THAT LEARNERS MAY SELF-EVALUATE BETTER

The following example is from the occupational area of AUTO BODY PAINTING.

As a result of going through this example, no matter what occupational area you teach, you should be able to:

KO: Pinpoint appropriate knowledge objectives (KO), performance objectives (PO), and attitude objectives (AO).

PO: Use performance/behavioral objectives in such a way that your students will catch on more quickly as to exactly what you expect of them.

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SECTION 1

THE TEACHER GENERATED OBJECTIVE

On this page, you will find an exact reproduction of a performance/ behavioral objective as submitted by a teacher.

OBJECTIVES: To prepare and paint a panel with acrylic enamel

1. Prepare metal for priming
   - A. Feather-edging
   - B. Metal condition
2. Mix primer
3. Prime panel
4. Sand primer for painting
5. Mixing of acrylic enamel
6. Proper spraying techniques of acrylic enamel
7. Cleaning of spray gun

TEST: Have student prepare and paint panel with acrylic enamel evaluated by instructor

SECTION 2

A FEW NON-EXPERT REACTIONS

The teacher whose objective was reprinted in section 1 undoubtedly alloted a lot of time to the task of writing.

It is quite obvious that he has analyzed the two objectives of prepare and paint into seven component steps.

When this objective was presented to professional painters, most of them agreed he had done a good job of sequencing. Some disagreed with one or two details, but everyone felt he had given a good general concise summary. They felt he had produced a good outline for a script from which he could speak.

This same objective was presented to people that did not have much familiarity with preparing and painting a panel with acrylic enamel. These non-experts understood most of the vocabulary, but they were lost when it came down to details.

Similarily, the non-experts were able to understand what the teacher was after in the test item. The trouble was that they were not able to perform the test item or to self-evaluate without further information. They admitted that the teacher seemed to have done a good job of organizing the subject matter for himself. Now, they felt he must tackle the problem of appealing to the beginner who has nothing to go upon as far as previous experience was concerned.

FOCUSING PERFORMANCE/BEHAVIORAL OBJECTIVES FOR BEGINNERS

In order to meet the objections raised by non-experts, the expert teacher who wrote the objective in section 1 must be able to do the following:

1. Make a clear, precise determination of what it is he wants the learner to be able to do when preparing and painting a panel with acrylic enamel.

2. Establish both the limiting and facilitating conditions under which the learner is to do what is asked.

3. Define the minimally acceptable level of proficiency.

4. Decide what methods to use in judging whether or not a student is performing at the established level(s) of proficiency.

In other words, the objective as printed in section 1 has stressed what the teacher will do in teaching this unit. The four specific steps stressed above will force the teacher to switch the emphasis from what the teacher will do to what the learner will do.

It is not the intention of section 2 to go through all four of these steps for each of the seven parts of the objective. In order to let you work through this as an exercise, here is a code that summarizes these four steps.

B = A clear description of BEHAVIOR

C = Mediating CONDITIONS

P = Level of PROFICIENCY

M = METHODS for ascertaining that the proficiency level has been reached

CODE C: In order to stress the existing conditions from the learners point of view, you must decide what type of metal conditions the student will be exposed to: rusty or non-rusty; painted or unpainted; peeling paint or non-peeling paint; dented metal or smooth metal.

CODE B: Once the above conditions have been spelled out, you are able to give a clear description of the behavior you intend. Thus, instead of saying, "Prepare metal for priming," you will be able to specify sand, burn, scrape, hammer, polish, or some other specific verb. This will tell the beginner what you have in mind. You don't have to write this for yourself, but you must think of the beginner who is not exactly certain what you mean by preparing metal.

CODE P: Once you have spelled out the above conditions and behavior, you are able to spell out to the learner what you're looking for when you evaluate his work. Thus, you can tell the learner if you want him merely to scrape off the loose rust or to remove every trace of rust. You can tell the learner whether he is merely to rough up the good coat of paint or to peel it all off with a paint remover.

A WORD OF CAUTION HERE: If you were to apply codes, B, C, P, and M to each of the above seven steps of your objectives, you would have too much writing to do. You would never be able to get it all down on paper, and your students would never have enough time or patience to read it all.

In other words, your job is not to write a textbook or a workbook. Your job is to make sure that your students learn more in the short time they are under your guidance.

This is where you must decide for yourself. It would be possible for you to go through the above seven steps looking at codes B, C, P, and M. This is not always necessary. Besides, you don't have that much time.

There is another approach. It's obvious that your objective is broken down into preparing and painting. You don't have enough time to inspect each of the seven steps for all the students. You might try a simple number of check points:

1. Check the panel to make sure it's properly prepared for the primer.

2. Check the primer coat to make sure it has been properly applied and sanded before the acrylic enamel is placed.

3. Check the final product to see that the acrylic enamel is properly applied.

4. Check the spray gun to make sure that it is properly cleaned out.

Once your students become aware of these check points, they should have a clearer and step by step idea of exactly what you expect from them. The better ones can help you check. This saves time.

SECTION 3

A FEW ALTERNATIVE REVISIONS

The following ideas are recommendations. They are not written by professional painters. They are given to you from a non-experts point of view. They are intended to make it easier for the learner to understand exactly what you expect of him.

MINIMUM CHANGE VERSION:

OBJECTIVE: Prepare and paint a panel with acrylic enamel.

1. Prepare metal for priming
2. Mix primer
3. Prime the panel
4. Sand primer for painting
5. Mix the acrylic enamel
6. Use spray gun to apply acrylic enamel
7. Clean spray gun

TEST: The student will prepare and paint a metal panel with acrylic enamel.

ANSWER KEY: The teacher will check the following:

A. The finish of the acrylic enamel on the metal panel

B. The cleanliness of the spray gun

SELF-EVALUATIONAL ANSWER KEY: The student will check the following before submitting his finished product to the instructor for final evaluation:

1. The smoothness of the finish

2. The evenness of the color

3. ETC., ETC

(The etc., etc is to filled in by you the expert instructor who knows exactly what the student should be able to self-correct on his own.)

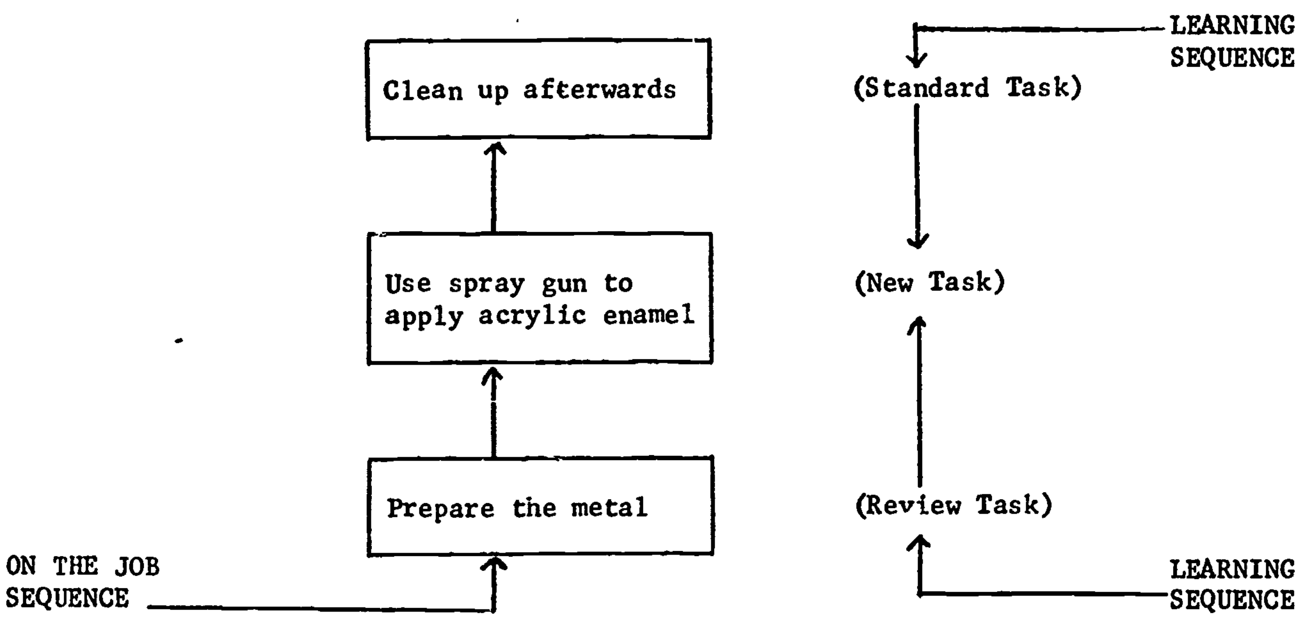
A WORD OF CAUTION: Lest section 2 be misunderstood as an invitation to do a lot of writing, keep in mind that the biggest change recommended is to switch from teacher-centered steps to learner centered series of tasks. This is the major changeover in objectives.

Similarily, the major changeover in test items is to switch over from teacher corrected test items to a series of self-diagnostic learner self-evaluative criteria.

This changeover in evaluation is much easier to do than to write about. For example, you can write, "prepare metal: make sure that ETC, ETC, ETC. It is left to you the experienced teacher to decide what you should write down in place of the letters etc, etc, etc.

ON THE JOB SEQUENCING

It is possible to cut down on the number of steps and the number of words in your preparing and painting objectives. Look at the following chart.



It is conceivable that your students have been previously introduced to cleaning up such things as spray guns and paint cans. It is equally conceivable that your students have learned how to prepare metal. By presenting your objectives in the form of a diagram above for your students, you are stressing on the job conditions. You are underlining to your students how they should plan and prepare their work. Similarily, with the introduction of review tasks and standard tasks of safety, you are showing the students how to put together their basic skills into newer combinations.

DIFFERENT DOMAINS:

There are other ways to cut the pie. You can start to think of the difference between knowledge objectives (KO), performance objectives (PO), and attitude objectives (AO).

KO: Recognize a metal surface that is ready for spraying with acryiic enamel.

PO: Use a spray gun properly when applying acrylic enamel.

AO: Prove yourself a "professional painter" by cleaning up your work area and spray gun properly.

Your job as an instructor is to get your student to perform professionally. You want him to go beyond the mechanical execution of a number of steps in any job. You want him to be able to think for himself and to plan out his work. Eventually, even the correction process must be taken over by the students.

This approach to different domains is not intended to get you doing more writing. It is intended to have you do less writing and a different type of writing.

It is also intended to get you doing a different type of testing. Thus, you will do KE testing for knowledge evaluation, PE testing for performance evaluation, and AE testing for attitude evaluation.

LEARNING SEQUENCE (LEVEL OF DIFFICULTY):

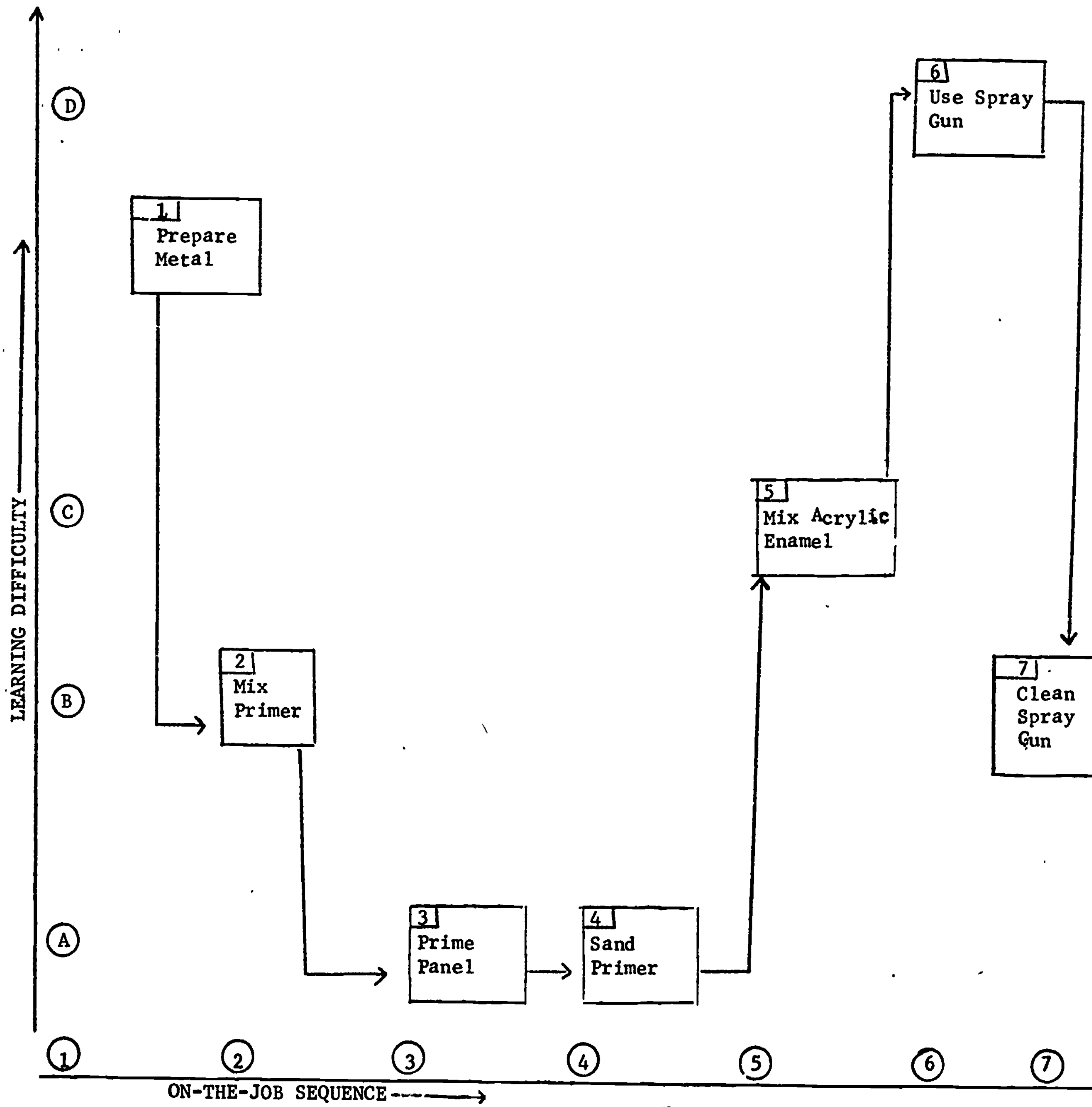
Some tasks are easier to learn than others. Even though they may appear last in the on the job performance, these tasks are much easier to learn. Sometimes the first task of on the job performance is quite difficult to learn even though the next sequential task is quite easy. Thus, for example, you may find out that it is easier for your students to learn how to use a spray gun than to prepare the metal surface, even though the metal surface must be prepared before the spray gun is used. With this in mind, try to sequence both the on the job performance and the learning level.

As you look at the next chart, which studies learning sequences as level of difficulty, don't waste too much time in testing the assumption that tasks three and four are the easiest to learn nor the assumption that tasks one and six are the hardest to lcarn.

Instead, try to concentrate your energies on seeing what happens to the learner when you stress the on the job sequence as the sequence of learning.

As is obvious from this chart, you are starting off with a very difficulty task,then a moderate task,then a very easy task,then again some very difficult tasks,then some easy tasks. This yo-yo approach to learning is not necessarily the best learning sequence.

LEARNING SEQUENCE (LEVEL OF DIFFICULTY):



CONCLUSIONS

"Learn from teachers who work alongside you in different specialties."

"Your common link is your mutual concern for learner benefits."

This document has presented several examples of HOW TO IMPROVE TEACHER GENERATED OBJECTIVES.

These examples are applicable to:

A. All areas of instruction:

General Education
Professional Education
Occupational Education
Career Education

B. All levels of learning:

Pre-Kindergarten
Elementary
Secondary
College
University (BA, MA, Ph.D.)

Each teacher who reads this document should be able to:

KO: Recognize learner benefits in what is taught.

PO: Set the stage for learner autonomy in a wide variety of learning environments.

AO: Value self-evaluation as a skill every learner needs in every area of human excellence.

CRITICAL EVALUATION

Thank you for the time you took to read this manuscript entitled

IMPROVING TEACHER GENERATED OBJECTIVES IN ORDER THAT LEARNERS MAY SELF-EVALUATE BETTER.

Would you PLEASE take a few minutes to summarize your reactions by responding to the following short answer and multiple choice rating questions? Circle all that apply.

OVERALL IMPRESSION :

A. Well done
B. Above average
C. Average
D. Below average
E. Unacceptable

IMPORTANCE OF TOPIC :

A. A relevant issue
B. Important
C. Highly technical
D. Futuristic
E. Out-of-date

AUTHOR'S POINT OF VIEW :

A. On target for our readers
B. Would appeal more to readers of ________

____

C. Not acceptable

GRAMMAR AND FORMAT (TYPING)

A. Acceptable for our publication
B. Unacceptable
C. Needs improvement in

____

INTRODUCTION (BEGINNING)

A. Well done
B. Average
C. Below average

MAIN CONTENT

A. Well done
B. Above average
C. Average
D. Below average
E. Unacceptable because ________

____

CONCLUSION

A. Well done
B. Above average
C. Average
D. Below average
E. Unacceptable because ________

____

RECOMMENDATIONS FROM US

A. We will print it
B. Revise it and return it to us for reconsideration
C. Try submitting it to ________

____

D. Revise it and submit it to

____

E. Reorganize it and start over again
F. Forget it; it's a lost cause

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